

Work Order ID 128702

Friday, August 28, 2015 8:18:17 AM

128702

Page 1

Item ID: D212-664-201 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Aft Crosstube - High
Start Date: 1/22/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 1/22/2015 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: MLJ Date: AUG 28 2015 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D212-664-241	E								
DSI9563	B								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile and create labels as per PPP D212-664-201		CHG006						
110	Pick Kit	0.00							
110	Packaging								
Packaging	Memo	0.00							
Packaging									

Handwritten notes:
DAS 6 9-89
MLJ 16-01-26
DAS 27 9-89
JAN 9 2016
BL 15/12/22

D212-664-201/128702

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Item ID: D212-664-201

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Aft Crosstube - High

Stop ***NS2***

Start Date: 1/22/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/22/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Crosstubes	0.00							
140									
Crosstubes	Memo	0.02							
Crosstubes	1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550, DT8551, drill table DT8577 and locate tower holes #8 as per QSI0010.								
	2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.								
	3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241								
	4- ***WEAR LATEX GLOVES HANDLIND CROSSTUBE.*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241								
150		0.00							
150									
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes	***IMMEDIATELY AFTER GRINDING***								
	1- PRESSURE WASH X-TUBE INSIDE AND OUT								
	2- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER QSI005.								

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Item ID: D212-664-201

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Item Name: Aft Crosstube - High

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Start Date: 1/22/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/22/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo	0.00 0.00				/			DAS 38 9-89 JAN 04 2016
170 *170* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				/			DAS 38 9-89 JAN 04 2016
180 *180* Outsource2 Outsource process - NDT	Outsource process - NDT per QSI038 4.1 Memo ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Liquid Penetrant Inspection as per QSI 038 Issue P/O: <u>30916</u> LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	0.00 2.00							DAS 13 9-89 JAN 08 2016

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Item ID: D212-664-201

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N900040100Setup Start ***NS1***

Revision ID:

Item Name: Aft Crosstube - High

Stop ***NS2***Start Date: 1/22/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 1/22/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	Receive & Inspect for Damage & Mat'l Certs	0.00							
100	Packaging								
Packaging	Memo	0.00							
Packaging	***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***								
	Ensure copy of NDT results attached to work order.								
200	QC5- Inspect part completeness to step on W/O	0.00							
200									
QC	Memo	0.00							
Quality Control	***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***								
	Inspect for damage & ensure results are as per Dwg D212-664-241								

1x 80/6-01-11

1 DAS 38 8-89 JAN 11 11:10

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Item ID: D212-664-201

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High

Start Date: 1/22/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/22/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

Spray Painting per QSI005 4.2

0.00

210

SprayPaint

SprayPaint

Memo

0.01

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Mask batch number

1-Prime inside & outside crosstube as per QSI 005 4.2

BATCH: 133084

2- After painting remove masking and apply matte clear coat per QSI005 4.2

BATCH: 130762

3- MASK UNDERSIDE OF CROSSTUBE AS SHOWN ON DWG BEFORE PAINTING

4 -Paint Outside of Tube as per Dart QSI 005 4.2

BATCH: 133885

1
DAS
41
9-89
16-1-18

220

QC14- Inspect Spray Paint

0.00

220

QC

Memo

0.00

Then, Wrap in plastic bag to protect from scratches

Quality Control

1
DAS
38
9-89
JAN 25 2016

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Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Aft Crosstube - High

Stop *NS2*

Start Date: 1/22/2015 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 1/22/2015 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop ***NR2***

[illegible]

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Item ID: D212-664-201

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N900040100Setup Start ***NS1***

Revision ID:

Item Name: Aft Crosstube - High

Stop ***NS2***

Start Date: 1/22/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/22/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

DAS
6
9-89DAS
28
9-89

JAN 2 5 2016

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

DAS
27
9-89

JAN 2 6 2016

270

Packaging

0.00

270

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D212-664-201
Location : FG093DAS JAN 2 6 2016
28
9-89
27
9-89

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Item ID: D212-664-201

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N900040100

Setup Start *NS1*

Revision ID:

Item Name: Aft Crosstube - High

Stop *NS2*

Start Date: 1/22/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 1/22/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

280

QC21 - Final Inspection - Work Order Release

0.00

280

QC

Memo

0.00

Quality Control

MLJ

JAN 26 2016

20160126

Picklist Print

Friday, August 28, 2015 8:18:21 AM

Page 1

Work Order ID: 128702

128702

Parent Item: D212-664-201

D212-664-201

Parent Item Name: Aft Crosstube - High

Start Date: 1/22/2015

Required Date: 1/22/2015

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:E04.02.16ReformatK/DS

IPP Rev:F 06-03-29 Remove Coments on Pick List JLM

IPP Rev:G 07-04-30 As per Rev C JLM

IPP Rev:H 08-05-22 up date Qty of rubber cushion DD verf:EC IPP REV:I

14.05.27 AS PER ECN14-570 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D212-664- 201TRNRevC		Manufactured	No			110	Each	0.0000	1	1			
D212-664-201TRNRevC									**				
Crosstube Turning Detail													
D3595-063-530		Manufactured	No			230	Each	110.0000	2	X		DAS 41 9-89	15-1-19
D3595-063-530									**				
Rubber Cushion 0.63" wide x 5.30" Long													

Location

Loc Qty

Loc Code

FG

1

82656

1

LG051

109

115704

34

132515

75

D2940-1

Manufactured No

230

Each

24.0000

2

2

DAS

41

9-89

16-1-19

D2940-1

Support

Location

Loc Qty

Loc Code

LG052

24

128962

8

131129

10

132754

6

Picklist Print

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Page 2

Work Order ID: 128702

128702

Parent Item: D212-664-201

D212-664-201

Parent Item Name: Aft Crosstube - High

Start Date: 1/22/2015

Required Date: 1/22/2015

Start Qty: 1.00

Required Qty: 1.00

MS21920-28

Purchased

No

230

Each

132.0000

4

4

DAS

41

9-89

16-1-17

MS21920-28

Clamp

**

4

Location

Loc Qty

Loc Code

FG

1

105884

1

LG050

52

M130400

50

M130665

2

LG051

79

M132169

38

M132381

3

M132522

38

D3428-1

Manufactured

No

250

Each

30.0000

1

1

DAS

6

9-89

DAS

28

9-89

D3428-1

Placard

**

135955

JAN 25 2016

Location

Loc Qty

Loc Code

ST035

6

125453

6

ST038A

24

131158

12

133206

12

DAS

27

9-89

Picklist Print

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Page 3

Work Order ID: 128702

Parent Item: D212-664-201

Parent Item Name: Aft Crosstube - High

128702

D212-664-201

Start Date: 1/22/2015

Required Date: 1/22/2015

Start Qty: 1.00

Required Qty: 1.00

MS21042L6

Purchased

No

250

Each

328.0000

6 6

DAS

6

9-89

DAS

28

9-89

MS21042L6

Nut

**

133134

Location

Loc Qty

Loc Code

ST260a

100

m133031

100

ST273A

200

m131624

200

ST305

11

m129909

1

m132262

10

t260a

17

m131317

17

DAS

27

9-89

NAS1149D0663J

Purchased

No

250

Each

1,183.000

18 18

DAS

6

9-89

DAS

28

9-89

NAS1149D0663J

Washer

**

133769

Location

Loc Qty

Loc Code

ST260

227

M131618

227

ST260a

889

M132256

889

ST269

67

M126334

67

DAS

27

9-89

AN6-40A

Purchased

No

250

Each

128.0000

4 4

JAN 25 2016

AN6-40A

3/8-24 BOLT X 3" LONG

**

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

ST286A

128

M131618

28

M131803

100

DAS

27

9-89

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Shop Packet Print

Page 3

Picklist Print

Friday, August 28, 2015 8:18:21 AM

Page 4

Work Order ID: 128702

128702

Parent Item: D212-664-201

D212-664-201

Parent Item Name: Aft Crosstube - High

Start Date: 1/22/2015

Required Date: 1/22/2015

Start Qty: 1.00

Required Qty: 1.00

AN6-41A

Purchased

No

250

Each

77.0000

2

2

AN6-41A

Bolt

DAS

28

9-89

Location

Loc Qty

Loc Code

ST286A

62

M129913

2

M131957

60

ST333

15

M131618

15

DAS

6

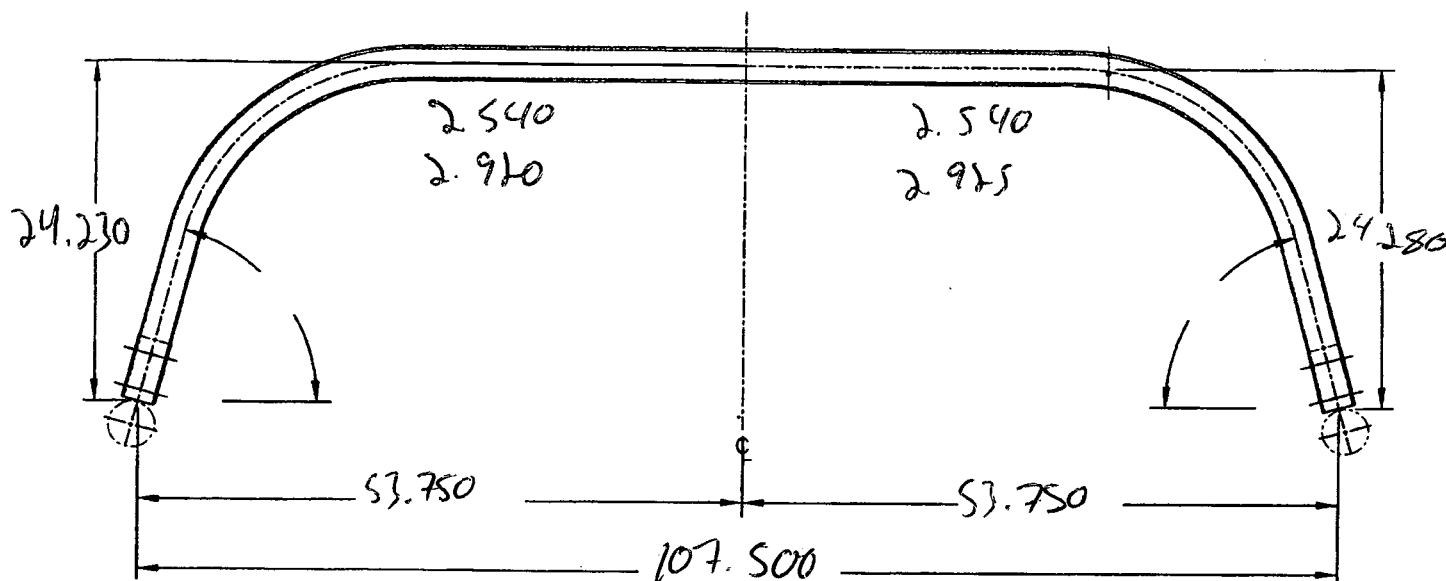
9-89

JAN 25 2018

DAS
27
9-89

DART AEROSPACE LTD	Work Order:	128702
Description: Crosstube High Aft (205/212)	Part Number:	D212-664-201
Inspection Dwg: D212-664-241 Rev: E		Page 1 of 1

Required Dimension	Min	Max
Height	24.17	24.43
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70
Bending Passes	5	--
Crushing	--	7.2%



	Side A	Side B
Bending Passes	16	16
Crushing	7%	7%
Comments		
DAS		
47		

QC15 Inspection	9-89
Date	15-12-89

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. C	KJ/JLM	
C	10.04.01	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.07.08	Crushing percentage revised	KJ	up

Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2		D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6		2	D5018-1	SUPPORT
7	4	4	MS21920-28	CLAMP (OR MS21920-30)
8	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.362±0.020
- 2) FINISH: a) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
b) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
c) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
d) PAINT OUTSIDE PER DART QSI 005 4.2
e) REMOVE MASKING AND APPLY MATTE CLEAR COAT
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-241/-241B = 44.2 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- 10) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R35.5 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

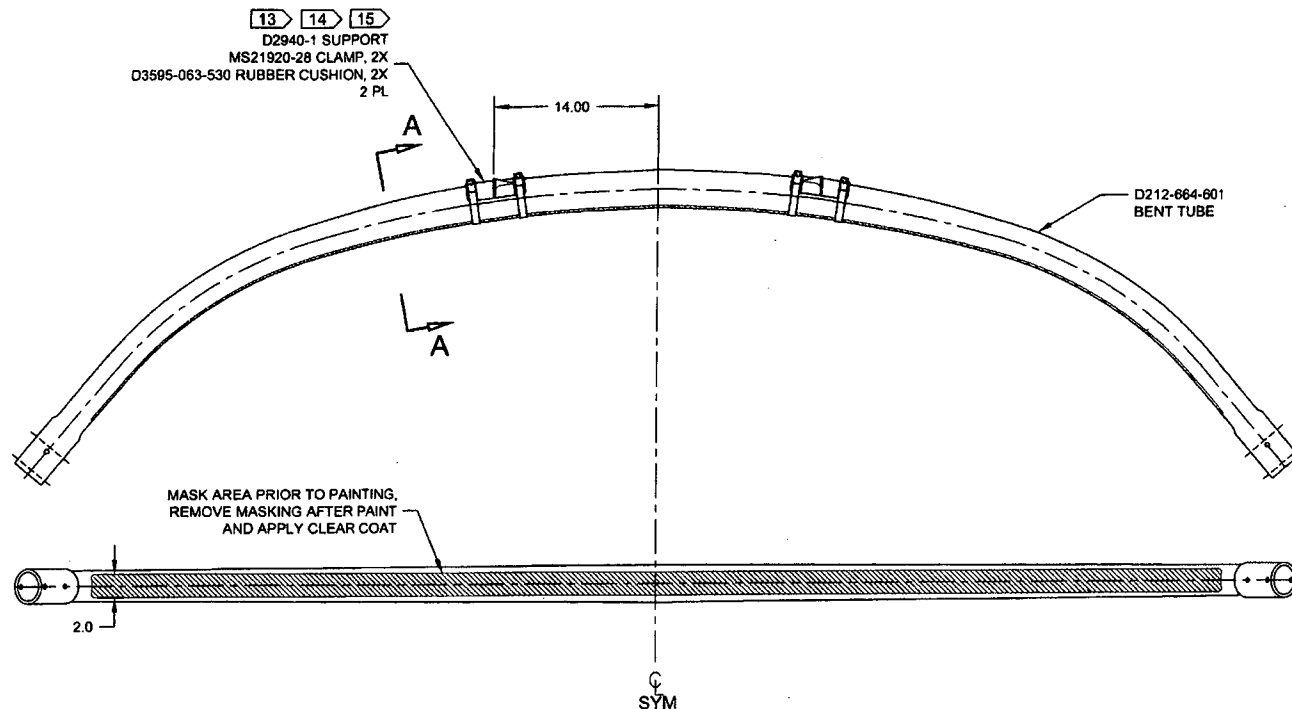
ASSEMBLY

- 13) INSTALL D2940-1 / D5018-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 14) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

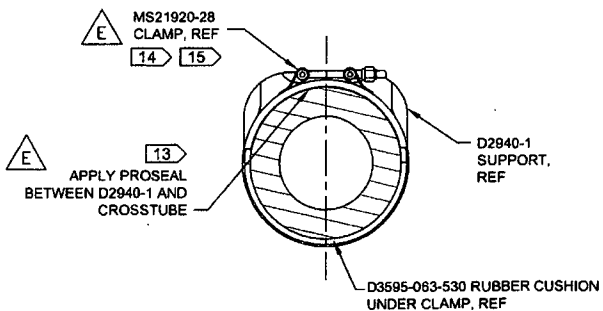
NO 128702 MLW
1501-22

RELEASED
2014-05-26

E	D5018-1 WAS D2940-1 (-241B), PROSEAL WAS MAGNOBOND, NOTE 2: ADD INSPECTION WINDOW, NOTE 11: ALLOW 7.2% CRUSH, NOTE 15: ADD 72HR CURE AND RETORQUE FOR PROSEAL, ADD SHEET 3, CLAMPS REVERSED TO PREVENT CHAFING (ZN B7-2, B7-3), BEND HEIGHT TOL. NOW 0.25 WAS 0.13 (C1-4), INCORP DEO D-1/-2	CP	14.04.01
D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	DP	DART AEROSPACE LTD	
DRAWN	DP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DW	DRAWING NO.	REV. E
MFG. APPR.	DP	D212-664-241	SHEET 1 OF 5
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



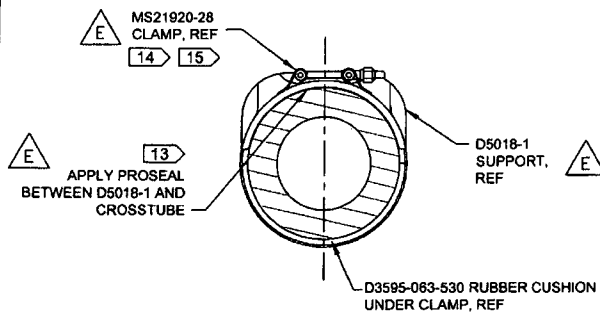
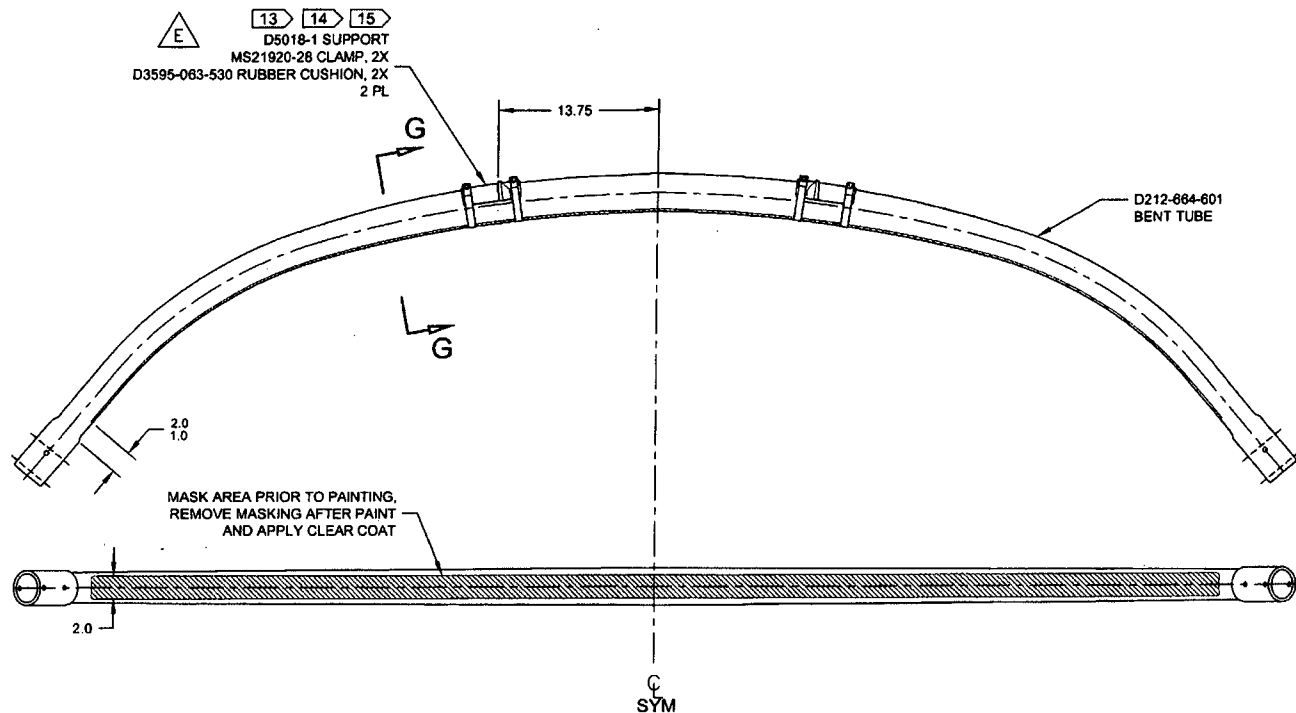
**D212-664-241
ASSEMBLY DETAIL**



**SECTION A-A
SCALE 4X**

RELEASED
2014-05-26
MTP

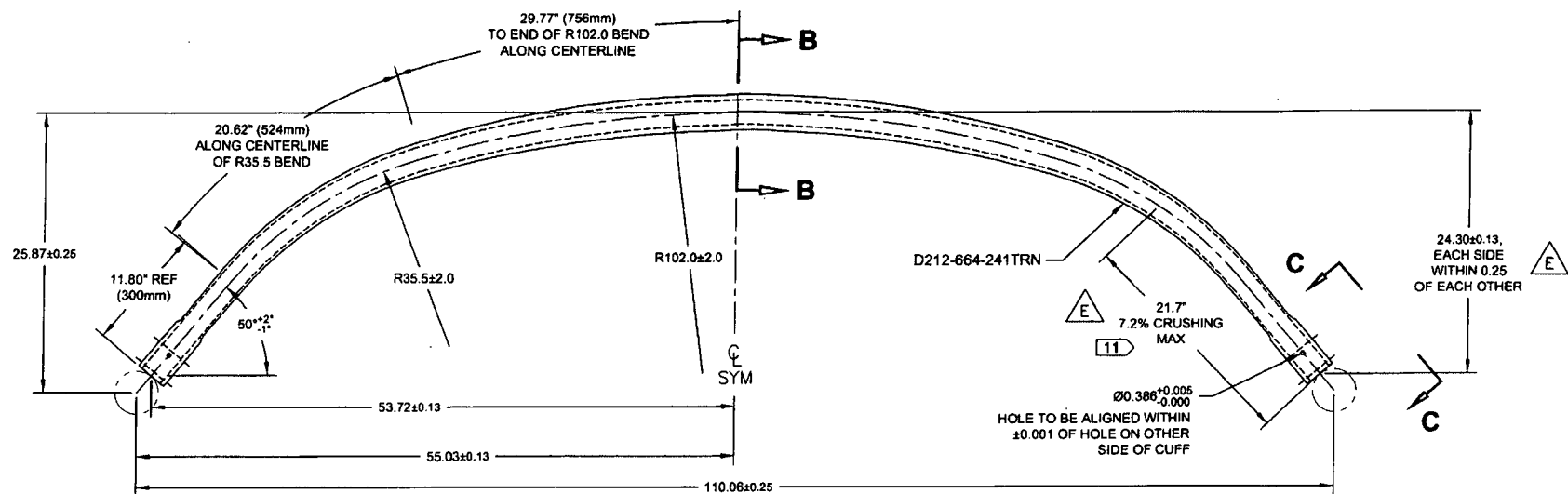
DESIGN	Q	DART AEROSPACE LTD	
DRAWN	Q	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DL	DRAWING NO.	REV. E
MFG. APPR.		D212-664-241	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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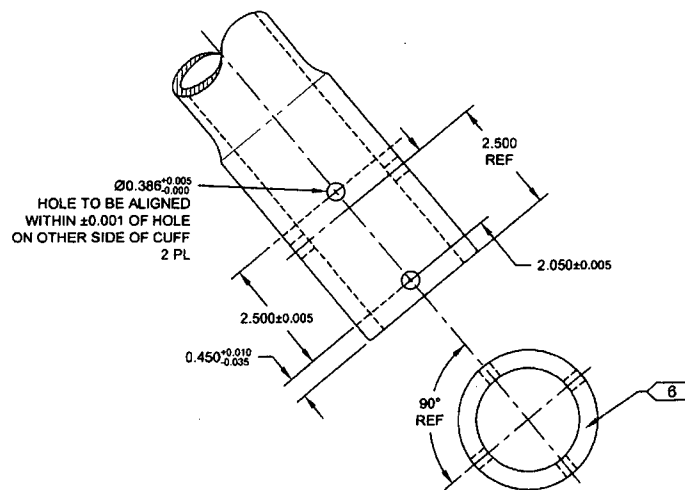
**D212-664-241B
ASSEMBLY DETAIL**

RELEASED
2014-05-26

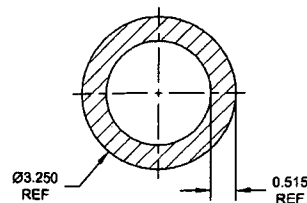
DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DW	DRAWING NO.	REV. E
MFG. APPR.		D212-664-241	SHEET 3 OF 5
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
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D212-664-601 11
BENDING AND DRILLING DETAIL



VIEW C-C: CUFF DETAIL
 SCALE 3X



SECTION B-B
 SCALE 4X

RELEASED
 2014-05-26
 JMD

DESIGN	<i>JP</i>	DART AEROSPACE LTD	
DRAWN	<i>DL</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>JP</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>JP</i>	D212-664-241	SHEET 4 OF 5
APPROVED	<i>JP</i>	TITLE	SCALE
DE APPR.	<i>JP</i>	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
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RELEASE
2014-05-26

DART SERVICE INSTRUCTION

TO AMEND INSTRUCTIONS FOR CONTINUOUS AIRWORTHINESS ICA-D212-664 Rev. 6 OR LATER

REF. CANADIAN STC: SH01-9
REF. FAA STC: SR01298NY
REF. EASA STC: EASA.IM.R.S.01304

PURPOSE:

The supports on the following crosstubes are now installed using Proseal instead of Magnobond:

D212-664-101/-101B @ CHG 005
D412-664-105 @ CHG 002
D212-664-107/-107B @ CHG 002

D212-664-201/-201B @ CHG 005
D212-664-207/-207B @ CHG 002

CHANGE:

For the crosstubes listed above, section 32.4 of ICA-D212-664 is amended as follows. Use Figure 1 of this service instruction and Figures 32-2 to 32-9 of ICA-D212-664 for further reference. For crosstubes of an earlier change number, it is recommended that if the supports are removed, the supports should be reinstalled using the procedure listed below.

32.4 SUPPORT INSTALLATION

- 32.4.1 Locate the area on the crosstube for installation of support (see Figure 1 of this service instruction). For D212-664-101/-107/-201/-207 and D412-664-105 crosstubes, the outward face of the support tabs should be 14.0" (355mm) from the crosstube center for 204/205/210/412/UH-1 aircraft. For installation on 214B/B-1 aircraft, the outward face of the support tabs should be 13.75" (349mm). Ensure paint finish of crosstube is intact; touch up as required per Chapter 5 (5.3.9) of ICA-D212-664.
- 32.4.2 If present, remove any paint/primer on bottom of supports. Abrade mating surfaces of support and crosstube with 400-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.3 Ensure a layer of 3M Scotch-Weld 2216 B/A Epoxy Adhesive is on the bottom of the support. If required, either apply or touch-up support to have a 0.03" to 0.05" thick layer of adhesive over the entire mating surface. Allow supports to cure for 24 hours.
- 32.4.4 Abrade mating surfaces of support (after cure) and crosstube with 180-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.5 Apply a 0.04" to 0.07" thick layer of Proseal 890 Class B or AMS-S-8802 Class B sealant underneath applicable support and install support as shown in Figure 1 of this service instruction.
- 32.4.6 Install the clamps opposite to crosstube support as shown in section A-A of Figure 1. Install rubber cushions underneath each clamp around the bottom circumference of the crosstube up to the crosstube centerline. Torque clamps 80-100 in-lb (9.0-11.3 Nm). It is acceptable to use smaller or larger sized MS21920-XX clamps than those listed in ICA-D212-664, ensure that after torquing the clamps per this instruction, the nuts are in safety but not bottomed out
- 32.4.7 Prior to installing crosstube on aircraft, allow supports to cure for 72 hours and recheck torque on clamps.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: 
D. SHEPHERD (DE # 02)
DATE: 11.07.20
CERT. NO.: SH01-9
ISSUE NO.: 3

B	ADD 3M 2216 ADHESIVE TO SUPPORT	CP	11.07.15
A	NEW ISSUE	CP	11.06.14
REV.	DESCRIPTION	BY	DATE
DESIGN	9	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	9		
CHECKED	ASS	DRAWING NO.	REV. B
MFG. APPR.	N/A	DSI 9563	SHEET 1 OF 2
APPROVED	AM	TITLE	SCALE
DE APPR.	ST	SUPPORT INSTALLATION CHANGE	NTS
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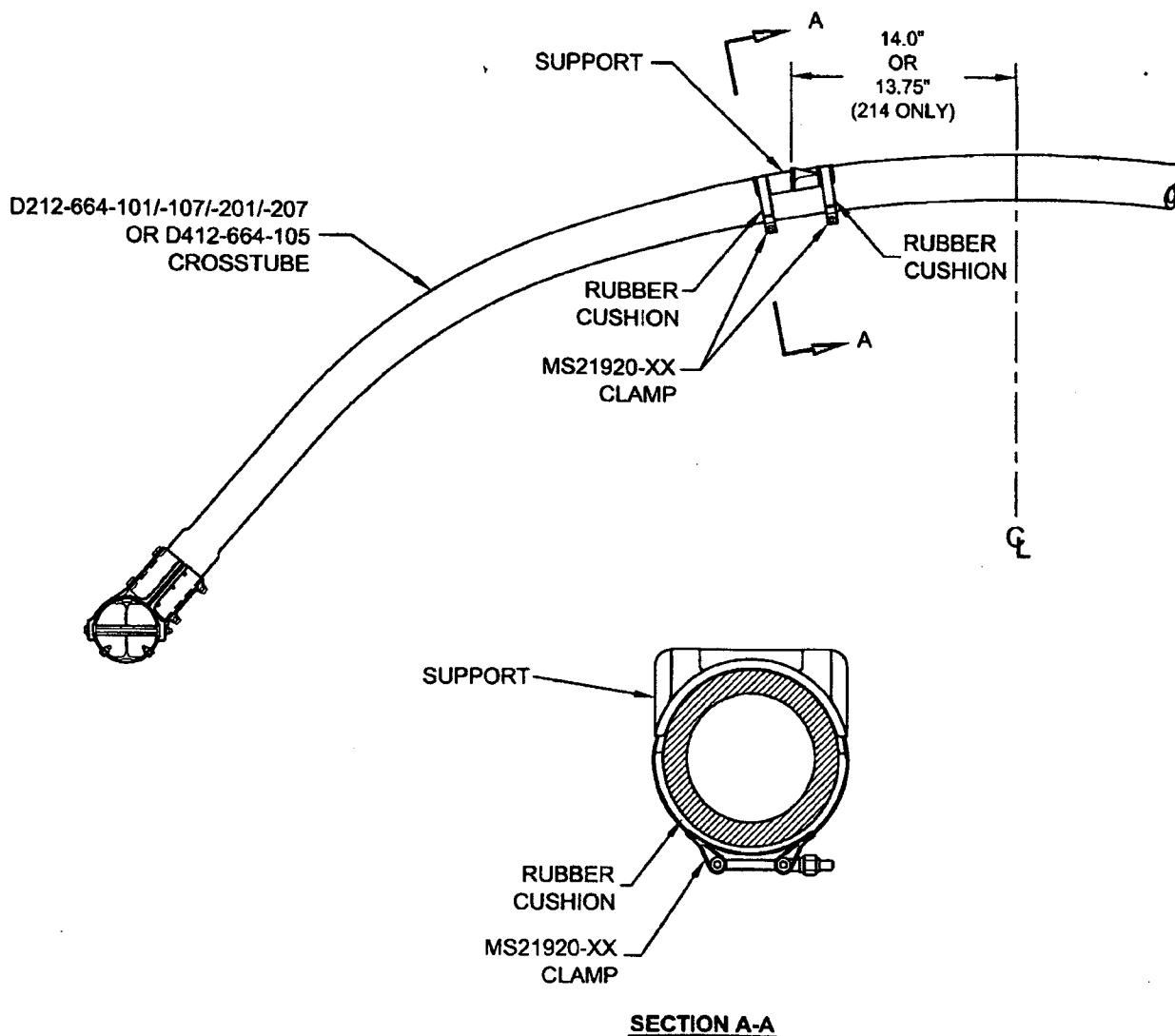


FIGURE 1: SUPPORT INSTALLATION

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 11.07.20
CERT. NO.: SH01-9
ISSUE NO.: 3

DESIGN	<i>Q</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>Q</i>		
CHECKED	<i>ASS</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>N/A</i>	DSI 9563	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SUPPORT INSTALLATION CHANGE	NTS
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212-664-201 "Folio"

Batch#:

Setup

Rollers 3.25 x 3 ****without spacers***...

Large Table, Shims 1.85" for SA bend, shims 1.7" for SB bend (new buggy)/adjust supporting rollers as required.

From cuffs, mark tube @ 32.1875 & 35.1875 RED and center line

Middle Bend

Start bending on 32.1875 line w/tube on LARGE TABLE. Approach from this line is 2775 on both Y&W. Use programs middleauto2.

SEE NOTES (14/04/09) FOR INSTRUCTIONS ON BENDING MIDDLES

Side bends

Start bending on 35.1875 line with long part of tube on LARGE TABLE. approach of Y 1900 W 3735

Run programs s01-s05 without stopping, CHECK, then s06 to 16 to finish. CHECK between each program..

Approach for Prog s06 to s16 is Y 2190 and W 3735

CHANGED 35.187 LINE TO 34.9, did not work! DP 11-8-11

11/11/02 tried new tangent line today. tube was far too high. nearly scrapped. 24.75 on one side, 24.5625 on the other. max tolerance is 24.43. jw

12/05/29 NOW USING ORIGINAL TANGENT LINES AGAIN

14-03-10 bent 4 tubes, all were on reference lin for middle bend. all tubes turned out too high, next time, try underbending muddles by approx 1/16" to try to achieve nominal measurement on height and span. tubes were finishing at program 8 - JW

14-04-09 removed points and re-adjusted "x" movement on program middleauto. RENAMED middleauto2. this underbent middles by aprox 0.0625"-0.125" then ran 1-5 CHECK, 5c, 6,7,8 checking between each. this has fixed height and tubes were finishing closer to nominal measurements. program "middleauto" is still in system as a failsafe.

Passes:

1	MA2	1
2	(5)	2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10		10
11		11
12		12
13		13
14		14
15		15



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO30916**

Purchase Order Date 1/8/2016

PO Print Date 1/8/2016

Page Number 3 of 4

Order From :

VC-SKY001

Ship To : DART AEROSPACE LTD

SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

905-678-5636

Ship To Contact

Ship To Phone

Ship Via:

Delivered

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

Line Total: \$118.12

6 128700

D212-664-201
CROSSTUBE

1/8/2016

1.00

\$118.13

\$118.13

Yes

1/8/2016

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$118.12

7 128701

D212-664-201
CROSSTUBE

1/8/2016

1.00

\$118.13

\$118.13

Yes

1/8/2016

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$118.12

8 128702

D212-664-201
CROSSTUBE

1/8/2016

1.00

\$118.13

\$118.13

Yes

1/8/2016

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Note:

1/8/2016

SP 16-01-11



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO26951	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 30916
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

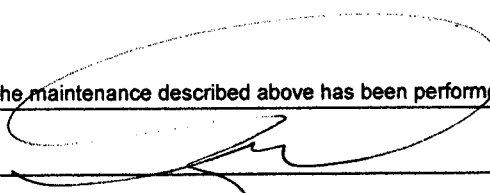
CARRY OUT NDT ON 8 CROSSTUBES AS PER PO30916

4 AFT CROSSTUBES, ITEM ID# D212-664-201, WORK ORDERS ID# 128701, 128703, 128700, 128702

4 FWD CROSSTUBES, ITEM ID# D212-664-101, WORK ORDERS ID# 140169, 140414, 140415, 140417

Action Taken:					Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M13 NO CRACK FOUND PEN. ZL-56, MPO13600, UV M-20141, CLEANER SKC-S MPO13923 , DEV. MPO11715					JAN 08 2016	 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: JAN 08 2016
Name: RAFIK MELIKIAN		